

Title (en)

ELECTRODE MATERIAL FOR METAL-AIR BATTERY

Title (de)

ELEKTRODENMATERIAL FÜR METALL-LUFT-BATTERIEN

Title (fr)

MATIÈRE D'ÉLECTRODE POUR BATTERIE MÉTAL-AIR

Publication

**EP 3171437 A4 20180328 (EN)**

Application

**EP 15822480 A 20150709**

Priority

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- JP 2015069753 W 20150709

Abstract (en)

[origin: EP3171437A1] The present invention provides an electrode material for metal-air batteries which has a homogeneous co-continuous structure due to a carbon skeleton and voids and is excellent in terms of permeability to and diffusibility of ions, oxygen, electrolytes, and electrolytic solutions and which, due to the formation of the carbon network, can rapidly diffuse the heat generated by battery reactions and has satisfactory electrical conductivity. The electrode material for metal-air batteries comprises a porous carbon material having a co-continuous structure portion in which a skeleton constituted of carbon and voids form a co-continuous structure and which has a structural period, as calculated by X-ray scattering method or X-ray CT method, of 0.002-10 µm.

IPC 8 full level

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Citation (search report)

- [XI] US 2008096061 A1 20080424 - BURCHARDT TRYGVE [CH]
- [XI] JP 2002015737 A 20020118 - TOSHIBA CORP
- [XI] WO 2011003033 A1 20110106 - ENERG2 INC [US], et al
- [XI] WO 2012092210 A1 20120705 - ENERG2 TECHNOLOGIES INC [US], et al
- [XI] WO 2012131628 A1 20121004 - BASF SE [DE], et al
- See also references of WO 2016009935A1

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